On describing the residential care process: social interactions between care workers and children according to the Structural Analysis of Social Behavior (SASB) model
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4 Interpersonal behaviors of residential child care workers

4.1 Introduction

What are the social interaction patterns between child care workers and children, both in residential living units with the emphasis on providing structure and in living units with the emphasis on providing emotional and affective care? This question is stated in chapter 1 as the central research question of the present study. In order to answer it, child care workers and children are observed in daily life situations of a Dutch residential child care center, called *The Widdonck*. The social interactions between residential child care workers and children are described in accordance with the *Structural Analysis of Social Behavior (SASB)* model, which is explained in chapter 2 and paragraph 3.4. According to the SASB model, social interactions are interpersonal processes, consisting of the interpersonal behaviors of the participants of the interactions.

This chapter focuses on the interpersonal behaviors of *residential child care workers*, both in living units where primarily structure is provided (referred to as STR living units) and in living units where primarily emotional and affective care is provided (referred to as EAC living units). The interpersonal behaviors of STR care workers and EAC care workers are described and, additionally, compared. These comparisons are completed with interpretations about whether or not the findings have a clinically reasonable meaning with respect to the specific treatment philosophy of both types of care.

In paragraph 4.2 the observed interpersonal behaviors that care workers show in relationship to the children are outlined. Paragraph 4.3 discusses by which kind of interpersonal behaviors the care workers react to various behaviors of the children. Paragraph 4.4 explores complex communication of the care workers, that is behaviors in which several interpersonal messages are entangled. Paragraph 4.5 addresses the question whether there are differences between individual child care workers, without regard to the type of care they provide. In paragraph 4.6 a summary of the results is presented.

In order to illustrate the different kinds of interpersonal behaviors, some examples of observed behaviors are added. These concern both verbal and nonverbal interpersonal behaviors.

4.2 Frequencies of SASB clusters

This paragraph presents frequencies of all the different kinds of interpersonal behaviors of residential care workers in terms of SASB clusters. The frequencies of the observed SASB clusters are presented and these SASB clusters are described. This section refers to subquestion 1 stated in paragraph 3.5. In addition, the observed frequencies of interpersonal behaviors of both STR and EAC child care workers are compared. This section refers to subquestion 2.
FOCUS 1 OTHER: 81.5%

1-1 Freeing and forgetting 10.4%
1-8 Ignoring and neglecting 0.7%
1-7 Attacking and rejecting 0%
1-6 Belittling and blaming 0.5%
1-5 Watching and controlling 9.7%
1-2 Affirming and understanding 27.7%
1-3 Loving and approaching 1.2%
1-4 Nurturing and protecting 31.3%

FOCUS 2 SELF: 18.5%

2-1 Asserting and separating 13.9%
2-8 Walling off and distancing 0.1%
2-7 Protesting and recoiling 0%
2-6 Sulking and scurrying 0%
2-5 Deferring and submitting 0.1%
2-2 Disclosing and expressing 2.4%
2-3 Joyfully connecting 0%
2-4 Trusting and relying 2.0%

FIGURE 6: The relative frequencies of the SASB clusters of all child care workers who primarily provide structure (STR) in relation to their children (n = 8134). The higher the percentage, the darker the shading of the SASB cluster.
FOCUS 1 OTHER: 82.9%

1-1 Freeing and forgetting 9.4%
1-8 Ignoring and neglecting 0.9%
1-7 Attacking and rejecting 0%
1-6 Belittling and blaming 0.9%
1-5 Watching and controlling 12.2%
1-2 Affirming and understanding 28.9%
1-3 Loving and approaching 0.7%
1-4 Nurturing and protecting 29.9%

FOCUS 2 SELF: 17.1%

2-1 Asserting and separating 14.4%
2-8 Walling off and distancing 0.1%
2-7 Protesting and recolling 0%
2-6 Sulking and scurrying 0%
2-5 Deferring and submitting 0.2%
2-2 Disclosing and expressing 1.6%
2-3 Joyfully connecting 0%
2-4 Trusting and relying 0.8%

0% 0-5% 5-10% 10-20% 20-40%

FIGURE 7: The relative frequencies of the SASB clusters of all child care workers who primarily provide emotional and affective care (EAC) in relation to their children (n = 6450). The higher the percentage, the darker the shading of the SASB cluster.
Totals
In total 14584 elements, that is complete verbal or nonverbal interpersonal utterances or behaviors, are coded from child care workers in relation to children. From STR child care workers to STR children 8134 elements are coded; 56 elements (0.7%) concern missing values since these were uncodable. From EAC child care workers in relation to EAC children 6450 elements are coded; 53 elements (0.8%) were uncodable and concern missing values. As described in paragraph 3.4, the mean number of observed interpersonal behaviors per interaction dyad is almost the same in both types of living units.

The frequencies of the interpersonal behaviors of the child care workers are presented on the SASB surfaces. Figure 6 presents the relative frequencies of the SASB clusters of STR child care workers in relation to their STR children. And figure 7 presents the relative frequencies of the SASB clusters of EAC child care workers in relation to their EAC children.

Figure 6 and 7 demonstrate that only five out of the 16 SASB clusters (cluster 1-1, 1-2, 1-4, 1-5, and 2-1) count for more than 90% of all interpersonal behaviors of the care workers.

In addition, it is shown that the percentages of the different interpersonal behaviors of both types of care workers are very much alike.

Care workers’ interpersonal behaviors with focus on other
Figure 6 and 7 show that the majority of the care workers’ interpersonal behaviors is located on SASB surface 1 with focus on other (STR care workers in total 81.5%; EAC care workers in total 82.9%). The care workers mainly interact with behaviors that are concerned with what is going to be done to, for or about the child, that is behaviors in which the emphasis is on what is happening to the child. This is as expected, since the interpersonal behaviors with focus on other are defined as prototypically adult behaviors.

As an overall picture of interpersonal behaviors with focus on other, both types of child care workers show:
• by far the most frequent SASB cluster 1-4 'nurturing and protecting' and cluster 1-2 'affirming and understanding';
• also to a substantial degree cluster 1-1 'freeing and forgetting' and cluster 1-5 'watching and controlling';
• and to a very small extent cluster 1-3 'loving and approaching', cluster 1-6 'belittling and blaming', and cluster 1-8 'ignoring and neglecting';
• but never SASB cluster 1-7 'attacking and rejecting'.

Below these interpersonal behaviors are described in more detail.

So both STR and EAC care workers interact in the first place with cluster 1-4 'nurturing and protecting' and secondly they both show cluster 1-2 'affirming and understanding'.

‘Nurturing and protecting’ (cluster 1-4) means that the child care workers use friendly influence in order to teach the children how to understand and do things. It also means that the child care workers use friendly influence to figure out and explain things to the children, to take care of them and back them up, or to ask questions with influence which clearly is for the benefit of the children. A few examples of cluster 1-4 behaviors are:
STR care worker: The child care worker pours out the cough syrup in the cap of the flacon and hands this to the child.

STR care worker: (with much warmth in her voice) Does the homework supervisor know that you are going to be late?...You know the rule is you are always there at four o'clock.

STR care worker: And what was that boy's reason for his quarrel with you?

EAC care worker: Now you have to...if you ride on your bike, hold your hand before the lamp and you can tell on the shining on your hand that the lamp is burning.

EAC care worker: (in the context of planning the activities of the children) What are you going to do this afternoon?

EAC care worker: When I am engaged with this child, I think that you have to be quiet till I have finished.

‘Affirming and understanding’ (cluster 1-2) indicates interpersonal behaviors in which the care workers in a friendly way give autonomy to the children. In case of cluster 1-2 behaviors the care workers listen to the children, affirm their thoughts and feelings or invite them to speak freely. They acknowledge the children's views or ask open questions in order to understand them. Examples of cluster 1-2 behaviors are:

STR care worker: Hello there (when the child is entering the living room).

STR care worker: (with warmth in her voice and raised eyebrows) Yes, hmmm (when the child is in the middle of his story about the football match he played that afternoon).

EAC care worker: Okay, I see.

EAC care worker: What did you do on the birthday party today?

On SASB surface 1 with focus on other STR care workers show in the third place cluster 1-1 'freeing and forgetting' and in the fourth place they show the opposite interpersonal behavior, represented by cluster 1-5 'watching and controlling'. Conversely, EAC care workers show in the third place cluster 1-5 'watching and controlling' and in the fourth place they show cluster 1-1 'freeing and forgetting'. However, this difference is rather small.

In case of ‘freeing and forgetting’ (cluster 1-1) care workers give neutral autonomy to the children, meaning that they leave the children on their own. Without concern they let the children free to do whatever the children want to do. For example:

STR care worker: Without saying or doing anything the care worker looks at the leaving child.

EAC care worker: The child care worker takes a glance at the playing child and turns round.

In case of 'watching and controlling' (cluster 1-5) care workers use neutral but strong influence in order to make children follow the rules, to control in a matter-of-fact way or to remind the children of what should be done. Some examples are:

STR care worker: Take your own football boots and go...go!

STR care worker: Leave him alone.

STR care worker: You know better than that!

EAC care worker: Sit down now.

EAC care worker: Look at me!

EAC care worker: However, you're not allowed to do this.

In addition, low frequencies of interpersonal behaviors with focus on other are shown by STR and EAC care workers as cluster 1-3 'loving and approaching', cluster 1-6 'belittling and blaming', and cluster 1-8 'ignoring and neglecting'.
On describing the residential care process

'Loving and approaching' behavior (cluster 1-3) implies that care workers approach the children in a very warm and friendly way and invite them to be in touch. With respect to STR care workers this often means that they are having a romp with the children. With respect to EAC care workers this often implies that the child is sitting on the care worker's lap and the care worker tenderly strokes the child. For example:

- **STR care worker:** The child care worker tickles the child.
- **EAC care worker:** The care workers hugs the child.

'Belittling and blaming' (cluster 1-6) means that care workers use hostile influence to punish or accuse the children, and to tell the children their ways are wrong. Some examples:

- **STR care worker:** If you don't stop making a fool of yourself, you don't get one penny.
- **STR care worker:** (with an angry and contemptuous tone of voice) Is it that hard to understand?
- **EAC care worker:** I send you to your room and you are not allowed to come back.
- **EAC care worker:** Well yes, it is a normal thing to do...to ride your bike over the bike of that other boy.

'Ignoring and neglecting' (cluster 1-8) implies that care workers give autonomy to the children in a hostile way. They do not notice or pay attention to a child at all, for example:

- **STR care worker:** While a child (who has been demanding for a while) is tapping on the child care worker's shoulder and is yelling in her ear, the child care worker does not move and without speaking a word she is fixing her gaze on another child.
- **EAC care worker:** The care worker suddenly leaves the room while the child is laughing and playful and tries to get in touch with the care worker.

No interpersonal behaviors of cluster 1-7 'attacking and rejecting' are observed with STR or EAC care workers. This would be very hostile and destroying behavior, like trying to hurt or angrily leave a child.

**Care workers' interpersonal behaviors with focus on self**

A minority of the interpersonal behaviors of the child care workers is located on SASB surface 2 with focus on self (STR care workers in total 18.5%; EAC care workers in total 17.1%). These interpersonal behaviors involve reactive behaviors in which the emphasis is on what is happening to the child care worker him or herself.

As an overall picture of interpersonal behaviors with focus on self both types of child care workers show:

- by far the most SASB cluster 2-1 'asserting and separating';
- to a very small extent cluster 2-2 'disclosing and expressing' and cluster 2-4 'trusting and relying';
- hardly any cluster 2-5 'deferring and submitting' and cluster 2-8 'walling off and distancing';
- and never SASB cluster 2-3 'joyfully connecting', cluster 2-6 'sulking and scurrying', and cluster 2-7 'protesting and recoiling'.

Thus, one cluster on surface 2 is frequently observed, which is cluster 2-1 'asserting and separating'. Cluster 2-1 represents neutral and separate behavior and indicates that care workers do their own things in relation to the children. Note that in case a care worker does
his or her own thing in relation to one particular child, this often means that the care worker at that time is interacting with another child. It regularly happens that a care worker needs to shift attention to another demanding child in such a way that it prevents this care worker from continuing to focus on the child whom (s)he was interacting with. Cluster 2-1 is also often seen at the end of a series of interchanges between a care worker and a child, when both persons go their own separate way. An example of a cluster 2-1 behavior is:

- STR care worker: (while she agreed upon a child's plan about going to build a wooden car) The care worker walks in the direction of the kitchen and takes her coffee.
- EAC care worker: While talking to a boy the care worker turns to a girl because this girl is interrupting by asking a question.

Other interpersonal behaviors with focus on self are observed in low frequencies. These regard cluster 2-2 'disclosing and expressing', in which care workers express their own thoughts or feelings to the children, and cluster 2-4 'trusting and relying', in which care workers ask the children for information they need for themselves. Very low frequencies of cluster 2-5 'deferring and submitting' and cluster 2-8 'wallowing off and distancing' are observed.

Finally, no interpersonal behaviors with cluster 2-3 'joyfully connecting', cluster 2-6 'sulking and scurrying', and cluster 2-7 'protesting and recoiling' are observed.

### Both types of care workers compared in terms of SASB dimensions

Considering the right side versus the left side of both SASB surfaces in figure 6 and figure 7, the degree of friendly versus hostile behavior is identified.

STR child care workers show in 64.6% friendly interpersonal behaviors. So in almost two thirds of all their interpersonal behaviors, they show behaviors in which there is a considerable amount of friendliness, whereas in only 1.3% there is a considerable amount of hostility. In addition, 34.1% of their behaviors towards the children are neutral.

The same degrees of friendly, hostile, and neutral behaviors hold for EAC child care workers. They interact in 61.9% with behaviors in which there is a considerable amount of friendliness, whereas in only 1.9% there is a considerable amount of hostility. In 36.2% of their behaviors towards the children they are neutral.

These results seem to indicate that in general the care workers are able to create a pleasant atmosphere in the residential living units. Only in situations they consider as serious situations the care workers get angry. The substantial amount of neutral behavior, especially neutral behavior with focus on self, seems to be a consequence of the busy situation in the living unit. Care workers often do not interact with all the present children at the same time, and once they are interacting with one child, they behave neutral towards other children. Also they regularly are neutral but controlling in order to take charge of the situation.

Considering the upper versus the lower half of SASB surface 1 with focus on other in figure 6 and figure 7, the degree of autonomy-giving versus controlling behavior is identified.

It is shown that STR child care workers use controlling behaviors in 41.5%, versus 38.8% of behaviors in which they give autonomy to the children. So there is little emphasis on controlling behaviors.

EAC child care workers use in 43.0% controlling behaviors, versus 39.2% of behaviors in which they give autonomy to the children. Whereas the degree of friendly influence
(cluster 1-4) and friendly autonomy-giving behavior (cluster 1-2) is balanced, the total amount of influencing behavior is higher than the total amount of autonomy-giving behavior.

With respect to the specific treatment philosophy of both types of care, the question raises whether or not one would expect that STR care workers show a higher amount of influencing behavior than EAC care workers do, and whether or not EAC care workers show a higher amount of autonomy-giving behavior than STR care workers do.

To recall, in the first type of care, that is living units in which primarily structure (STR) is provided, the concept of structure refers to boundaries that are adequate for healthy development. The most important forms of structure are rules and daily routines. Care workers teach the children to structure the world around them, to understand it and to make it to a certain extent predictable. In the second type of residential living units, in which primarily emotional and affective care (EAC) is provided, the relationship between care worker and child is considered to be a critical therapeutic element. The care worker must try to build a relationship based on mutual trust with these children, including supportive bodily contact. Mutual trust is supposed to become the motivation for a child to start behaving more adaptively.

It could be derived from those concepts of the different treatment approaches that STR care workers need influencing behavior in order to teach the children and make them follow the rules and daily routines. When they are believing that a child is doing things well, they need autonomy-giving behavior in order to let it go. EAC care workers on the other hand need friendly influencing behavior in order to ask for the children's trust, which is such a critical element in EAC living units. Autonomy-giving behavior is important for EAC care workers in order to invite children to express their thoughts and feelings and also to explicitly give the children room to be themselves. So it not necessarily is true that STR care workers need more influencing behavior than EAC care workers do, but the context in which they need it differs.

In addition to the global comparison of the two types of care workers in terms of SASB dimensions, the interpersonal behaviors of the care workers are also compared according to the SASB clusters. The next section goes into this issue.

**Testing of differences in SASB clusters between both types of care workers**

Figure 8 again shows the relative frequencies of STR and EAC care workers' interpersonal behaviors, but now per SASB cluster side by side.

Clearly, the similarities between the interpersonal behaviors of the two types of care workers are more prominent than the differences. The patterns of interpersonal behaviors of both types of care workers largely are comparable: the same SASB clusters are observed to a large extent and also the same SASB clusters are observed to a lesser degree.
Interpersonal behaviors of residential child care workers

**FIGURE 8:** The relative frequencies of the observed SASB clusters of care workers who primarily provide structure (STR) compared with those of care workers who primarily provide emotional and affective care (EAC).

Despite the similarities minor differences are noticeable in figure 8. It is tested whether significant differences exist or not. Table 7 presents the results.

**TABLE 7:**
Differences between the observed interpersonal behaviors of STR care workers and those of EAC care workers. In each cell the frequency and the standard z-score is presented. Significant z-scores, $z(0.01) < -2.58$ and $z(0.01) > +2.58$, are bold.

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$\chi^2 = 95.26$, $df = 12$, $p = .000$, $n = 14584$

Note. STR = provide primarily structure; EAC = provide primarily emotional and affective care.

Table 7 demonstrates a statistical significance difference between STR and EAC child care workers in their interpersonal behaviors towards the children $\chi^2(12, n = 14584) = 95.26$, $p = .000$. Interpreting the standard z-scores with an alpha level of 0.01, a significant difference is detected in five out of 13 possible interpersonal behaviors of the child care workers. Note that the formula for computing these z-scores is presented in paragraph 3.6.
However, the effect size of the observed difference appears to be 0.007. The rules of thumb proposed by Cohen (1988), which define effect sizes \( w \) of 0.1, 0.3, and 0.5 respectively as small, medium and large effects, are hardly needed to conclude that this is a very small effect. Due to the large sample size it still is significant.

Because of the large sample size and the small effect size of the difference between the two groups of care workers demonstrated by the chi-square test, the standard \( z \)-scores have to be interpreted with caution.

Concerning interpersonal behaviors with focus on other, STR care workers use significantly more cluster 1-3 ‘loving and approaching’ behaviors \((z = +3.21)\), whereas EAC care workers use significantly more cluster 1-5 ‘watching and controlling’ \((z = +4.78)\) and cluster 1-6 ‘belittling and blaming’ \((z = 3.18)\) behaviors. Intuitively, these results seem opposite to those that might have been expected. On the other hand, reasonable explanations could be put up for those observations. However, such explanations can not be presented by solely focussing on interpersonal behaviors of the care workers. Behaviors of the care workers have to be evaluated in relation with interpersonal behaviors of the children. Therefore, few relevant findings about the children's interpersonal behaviors, which are fully presented in the next chapter, are mentioned here in advance.

First, ‘loving and approaching’ (cluster 1-3) is a kind of interpersonal behavior that was more to be expected with EAC care workers, since this is extreme affiliative behavior which implies bodily contact. The observation that EAC care workers less often show approaching behaviors (cluster 1-3), however, does not necessarily mean that EAC care workers have less bodily contact with their children. If there is bodily contact between EAC care workers and children this often means that the children are sitting on a care workers lap. Such an event is then observed as one behavioral unit, during which often a prolonged conversation takes place. A conversation that for example could be described in terms of cluster 1-2 (understanding) and cluster 2-2 (expressing) behaviors, or in terms of cluster 1-4 (nurturing) and cluster 2-4 (trusting) behaviors. The finding that STR care workers use more cluster 1-3 ‘loving and approaching’ behaviors demonstrates that in STR living units care workers and children more frequently have playful interchanges, meaning that they more often are having a romp consisting of a series of short separate behavioral units. In addition, as will become apparent in the next chapter, EAC children more often than STR children go their own separate way if care workers try to make bodily contact and invite them to be in touch, whereas STR children more often react by joyful connecting behavior. This is an indication that for EAC children it is less easy to be very close to their care workers. Therefore, EAC care workers might be more cautious and more parsimonious with trying to make bodily contact.

Next, the neutral ‘watching and controlling’ behaviors of SASB cluster 1-5, in which care workers tell children exactly what to do and make children follow the rules seem to fit well to the treatment approach of providing structure. But it also is comprehensible that EAC care workers in relationship to their EAC children need this strong influence. EAC care workers are supposed to build a strong relationship with the children, based on mutual trust. For that reason they have to invite the children very explicitly to express their thoughts and feelings (cluster 1-2). In the next chapter it will be described that EAC children significantly more often show very separate behavior (cluster 2-1) after care workers invite them to speak freely (cluster 1-2). In case EAC care workers have shown a series of inviting behaviors
(cluster 1-2) that do not seem to affect the child, it might be reasonable to believe that they switch to showing neutral or even hostile controlling behaviors (cluster 1-5 or cluster 1-6). Another observation that could explain why EAC care workers show more neutral control (cluster 1-5) than STR care workers is the fact that EAC children in total significantly more often show ‘asserting and separating’ (cluster 2-1) behavior than STR children do (see chapter 5). It might be reasonable to believe that this strong separate behavior of children provokes strong controlling behaviors of care workers.

Finally, an explanation for the fact that EAC care workers show more ‘belittling and blaming’ (cluster 1-6) than STR care workers could be the observation that EAC children significantly more often show ‘sulking and scurrying’ (cluster 2-6) than STR children do (see chapter 5). This hostile submitting child behavior (cluster 2-6) provokes hostile controlling behaviors of care workers (cluster 1-6).

Concerning interpersonal behaviors with focus on self, STR care workers use significantly more cluster 2-2 ‘disclosing and expressing’ behaviors ($z = +3.51$) and cluster 2-4 ‘trusting and relying’ behaviors ($z = 5.51$). Additionally, as will be described in the next chapter, STR children more frequently than EAC children use interpersonal behaviors with focus on other. According to the SASB model, in relationships between adults and children the amount of interpersonal behaviors with focus on other and those with focus on self gets more and more balanced between the adult and the child as the child grows older. In paragraph 3.3 it was described that STR children are significantly older than EAC children. This could be an explanation for the observation that STR care workers show more behaviors with focus on self.

4.3 Sequences of SASB clusters

This paragraph explores the one-step sequences of the care workers’ interpersonal behaviors in terms of SASB clusters. It describes by which kind of interpersonal behaviors the care workers react to the different kinds of interpersonal behaviors of children. This means that the consequent SASB clusters by which child care workers follow the different kinds of antecedent SASB clusters of children are reviewed. This section refers to subquestion 3 stated in paragraph 3.5. In addition, reactive behaviors of STR and EAC care workers are compared, which refers to subquestion 4 stated in paragraph 3.5.

Totals

For STR care workers in total 9890 one-step sequences are observed. For EAC care workers in total 7708 one-step sequences are observed.

Note that the total number of sequences is higher than the total number of frequencies of the observed SASB clusters, respectively 8134 and 6450 for STR and EAC care workers. This is due to the way in which the SASB computer program FOLLOW (for tracing one-step sequences) counts transitions. FOLLOW counts per unit the transition from each single element in that unit to each single element in the next unit. For example, concerning three successive units (1, 2, and 3), each consisting of two elements (A and B), the frequency count
results in a total number of *six* (1A, 1B, 2A, 2B, 3A, 3B), whereas the sequence count results in a total number of *eight* (1A to 2A, 1A to 2B, 1B to 2A, 1B to 2B, 2A to 3A, 2A to 3B, 2B to 3A, and 2B to 3B).

**Improvement of readability**

In order to improve readability of the review of sequences, *restrictions* are applied to the number of antecedent behaviors that are presented as well as to the number of consequent behaviors that are presented.

First, in order to understand the restriction of the number of *antecedent* behaviors, a minor part of the results that will be presented in the next chapter have to be considered here in advance. The antecedent behaviors concern the interpersonal behaviors of the children. As will be described in detail in the next chapter, the children show 13 different kinds of interpersonal behaviors in terms of the possible 16 SASB clusters, with the emphasis on behaviors with focus on self. Out of this total of 13 different behaviors, the *number of antecedent interpersonal behaviors of children* that is considered in the present section is restricted to *eight*. These eight behaviors concern the most frequently observed antecedent behavior of the children with focus on other (cluster 1-5) and all empirically present antecedents with focus on self (clusters 2-1 to cluster 2-8, with the exception of cluster 2-7). Together they cover 97% of all STR children's empirically found interpersonal behaviors.

Next, the *number of consequent interpersonal behaviors of care workers* that is described per antecedent behavior, is restricted to *four*, or exceptionally to *five*. So for each antecedent SASB cluster the relative frequencies of the four or five most frequently observed consequent SASB clusters are presented. Together these four or five consequent behaviors cover per antecedent at least 80% of all empirically found consequent behaviors.

Note that complete transitional frequency matrices for both types of care workers are presented in appendix E. Table E1 presents a transition matrix with absolute frequencies and horizontal percentages of all observed transitions for STR care workers and in table E2 the same is presented for EAC care workers.

Regarding the restrictions mentioned above, figure 9 presents the consequent behaviors of both types of care workers to eight different antecedent behaviors of the children. Also for reasons of readability, the sizeable figure 9 is split in figure 9A to 9H. In that way for each kind of antecedent child behavior there is a figure which shows the consequent behaviors of both STR and EAC care workers, and the accompanying explanatory text is close to each figure.

The consequent interpersonal behaviors of both types of care workers are not only *described* per antecedent behavior of the children, but also *compared*. By means of the chi-square test and standard *z*-scores it is tested whether there are significant differences between consequent behaviors. In appendix F in table F1 full test results of these comparisons are presented. In the next section only significant *z*-scores are presented. Note that the formula for computing these *z*-scores is presented in paragraph 3.6. Because of small effect sizes, the differences have to be interpreted with caution.
First impressions about the care workers' reactive behaviors

As a whole, figure 9 shows that child care workers have various reactions to the different kinds of the children's antecedent behaviors. This points to the occurrence of various interaction patterns. In addition, figure 9 shows that focus on self (focus 2) behaviors of the children mainly are followed by focus on other (focus 1) behaviors of the child care workers.

Whatever the children's antecedent SASB cluster is, the child care workers almost always react to some extent with 'asserting and separating' (cluster 2-1). So regardless of the kind of the children's antecedent behavior, child care workers follow to some extent with continuing doing the things they are working on. Being busy with one child can implicate not having time or possibilities to pay attention to another child. This seems inherent in the busy daily routine in residential living units, where up to 7 or even 12 children live.

Below per antecedent child behavior a description of the four or five most important reactions of both types of care workers is presented. Each description is accompanied with the test results of the comparisons between these reactions of both types of care workers.

As with the frequencies, also with these sequences the similarities between both types of care workers are more prominent than the differences. At the end of the chapter a summary is provided in which similar sequences are put together and in which also the tiny differences in sequences between both types of care workers are put together.

Care workers' reactions to children's cluster 1-5

The most frequently observed children's antecedent behavior with focus on other concerns 'watching and controlling' (cluster 1-5). In this case children use strong influence; they try to set the rules and take charge of everything, or they make care takers follow their demand for attention.

Both types of care workers show similar consequent behaviors; no significant differences are observed, \( \chi^2(8, n = 621) = 9.03, p = .339 \). These consequent behaviors regard the following interpersonal behaviors.

The care workers react first by the 'asserting and separating' (cluster 2-1), meaning that they keep up their own autonomy and continue doing their own things. Note that according to the SASB model cluster 2-1 is defined as an antithetic reaction to the cluster 1-5 (Benjamin, 1974, 1984). This implicates that as a result of the position of the care worker's consequent behavior on the SASB model in relation to that of the child's antecedent behavior, this consequent behavior has a bigger chance to provoke new child behavior, which the care worker sees as more adequate behavior. The care workers show they do not have time for the demanding child and hope the children will react by leaving them alone.

Next, the care workers react by friendly behaviors: either 'affirming and understanding' (cluster 1-2), meaning that the care workers warmly try to understand demanding children and invite them to speak, or 'nurturing and protecting' (cluster 1-4), meaning that the care workers in a friendly way teach them how to do things.

In addition, the care workers react by neutral controlling behavior of 'watching and controlling' (cluster 1-5), meaning that the care workers react to a controlling child with the same amount of control and that they restrict the child. When this happens there is a power struggle between a care worker and a child.
Finally, both types of care workers react by the opposite behavior, which is ‘freeing and forgetting’ (cluster 1-1). This means that they leave the children on their own.

Consequences of care workers

Antecedent of children

<table>
<thead>
<tr>
<th>Antecedent of children</th>
<th>STR</th>
<th>EAC</th>
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</thead>
<tbody>
<tr>
<td>1-5</td>
<td>6.7%</td>
<td>7.3%</td>
</tr>
<tr>
<td>1-2</td>
<td>20.2%</td>
<td>18.2%</td>
</tr>
<tr>
<td>1-4</td>
<td>17.0%</td>
<td>20.5%</td>
</tr>
<tr>
<td>1-5</td>
<td>16.5%</td>
<td>14.1%</td>
</tr>
<tr>
<td>2-1</td>
<td>23.7%</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

1-1 Freeing and forgetting
1-2 Affirming and understanding
1-4 Nurturing and protecting
1-5 Watching and controlling
2-1 Asserting and separating

FIGURE 9A: The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 1-5 as antecedent behavior of the children.

Care workers’ reactions to children’s cluster 2-1

In case children show ‘asserting and separating’ (cluster 2-1) behavior, they know their own mind or do their own thing, meaning that they are very autonomy-taking. Both types of care workers most frequently react by friendly influence (cluster 1-4), meaning they explain to the children why they should not be separating or teach them what to do instead. However, STR care workers show this cluster 1-4 reaction significantly more often, $\chi^2(8, n = 4328) = 28.17, p = .000, z = +3.18$. Child behavior represented by cluster 2-1 indicates minimal influenceability. The fact that STR care workers more often try to answer this by friendly and moderate control in teaching the children and trying to get them interested seems to correspond to the treatment philosophy of providing structure. Note that the overall effect size ($w = 0.007$) indicates only a very small effect.

Secondly, depending on the context in which children are ‘asserting and separating’, both types of child care workers follow with one out of four kinds of consequent behaviors. These all are shown to almost the same extent and here no significant differences are tested between the two types of care workers (see appendix F, table F1). These consequent
Interpersonal behaviors of residential child care workers

behaviors concern ‘freeing and forgetting’ (cluster 1-1), ‘affirming and understanding’ (cluster 1-2), ‘watching and controlling’ (cluster 1-5), and ‘asserting and separating’ (cluster 2-1). Thus, depending on the context in which children show ‘asserting and separating’ behavior, that is depending on what a child care worker was asking from a child, child care workers let it go, or continue doing their own things, or acknowledge the children’s views, or tell the children exactly what to do.

According to the SASB model cluster 1-1 is a complementary reaction to cluster 2-1 and cluster 1-5 is an antithetic reaction to cluster 2-1. Complementarity means that the consequent behavior matches to the antecedent behavior in the sense that the same amounts of affiliation and interdependence are used. Antithesis is defined as the opposite to the complement of a specific behavior (Benjamin, 1984). Showing cluster 1-5 as an antithetic reaction to undesired cluster 2-1 behavior can help the care worker to change this child behavior into more adequate child behavior for a particular context, since care workers’ cluster 1-5 behavior probably elicits cluster 2-5 (‘deferring and submitting’) child behavior.

Consequences of care workers

FIGURE 9B: The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-1 as antecedent behavior of the children.

Care workers’ reactions to children’s cluster 2-2

The most frequently observed antecedent behavior of the EAC children is ‘disclosing and expressing’ (cluster 2-2). Reactive behaviors of both types of care workers demonstrate a
On describing the residential care process

similar pattern, though a significant difference is observed, $\chi^2(8, n = 5903) = 48.67, p = .000$. However, the overall effect size ($w = 0.008$) indicates only a very small effect.

Both types of child care workers mainly react by ‘affirming and understanding’ (cluster 1-2). According to the SASB model it is a complementary interchange, since both persons are friendly, and the child is autonomy-taking whereas the child care worker is autonomy-giving. So there is correspondence on the affiliation dimension and reciprocity on the interdependence dimension. EAC care workers show this reactive behavior more often, $z = +2.78$, which corresponds to the treatment philosophy of providing emotional and affective care. As mentioned before, EAC care workers have to invite the children very explicitly to express their thoughts and feelings. So it makes sense that they affirm the children, in case the children actually do express themselves.

In the second place, the child care workers react to the children’s friendly autonomy-taking behavior with friendly controlling behavior (cluster 1-4), meaning they influence the children in a friendly way by means of explaining, teaching or care taking.

Third, care workers react by ‘asserting and separating’ (cluster 2-1), meaning that they continue doing the things they are working on.

Next, both types of care workers react by ‘freeing and forgetting’ (cluster 1-1), but STR care workers show this reaction more often, $z = +3.01$. So, whereas STR care workers more often leave the children on their own after they expressed themselves, EAC care workers more often explicitly affirm these expressings.

FIGURE 9C: The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-2 as antecedent behavior of the children.
Care workers’ reactions to children’s cluster 2-3

Respect the consequent behaviors of care workers to ‘joyful connecting’ (cluster 2-3) child behavior, a significant difference is observed between both types of care workers, $\chi^2(8, n = 280) = 25.11, p = .001$. Note that the overall effect size ($w = 0.090$) is small.

When children are ‘joyful connecting’ (cluster 2-3) they are playful and enjoy being with the care worker. To this behavior the STR care workers respond in the first place with ‘loving and approaching’ (cluster 1-3). Again this is a complementary interchange, since both clusters have identical positions on the two different interpersonal surfaces. It is observed that STR care workers show this complementary reaction more often, $z = +3.62$. This result should not be interpreted as STR care workers having more bodily contact with their children as EAC care workers. In case care workers have bodily contact with children, in STR living units care workers and children are having a romp together, whereas in EAC living units the children are more often sitting on a care workers lap. A frolic more clearly consist of separate behavioral units of short duration, while sitting on one’s lap is only one behavioral unit that lasts much longer. Frequency is measured in the present project, while duration is not taken into account. Therefore, STR care workers more often are having a romp with the children, but not necessarily have more bodily contact. In addition, STR care workers follow with behaviors
represented by two SASB clusters adjacent to cluster 1-3, namely cluster 1-2 'affirming and understanding' and cluster 1-4 'nurturing and protecting'.

When EAC children are 'joyful connecting' (cluster 2-3) EAC care workers mainly react by friendly behavior. First, they use friendly influence by (cluster 1-4) teaching and explaining. Second, they use friendly autonomy-giving behavior by letting the children speak freely (cluster 1-2). Third, the EAC care workers respond with pure friendly behavior in 'loving and approaching' (cluster 1-3). Furthermore, EAC care workers significantly more often react by 'freeing and forgetting' (cluster 1-1), $z = +2.88$, meaning that they let the children do whatever they want to do.

**Care workers' reactions to children's cluster 2-4**

![Consequences of care workers](image)

FIGURE 9E: The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-4 as antecedent behavior of the children.

When children are depending on the care workers in a friendly way (cluster 2-4) by trying to learn or asking for guidance, the child care workers largely react complementary by taking care of them, teaching, explaining or guiding them (cluster 1-4).

Next, but to a much lesser degree, the care workers react by friendly autonomy-giving behavior in 'affirming and understanding' (cluster 1-2), meaning that they warmly try to understand the children, or invite them to speak freely.
Next, but again to a much lesser degree, the care workers react by neutral ‘asserting and separating’ (cluster 2-1) and by neutral autonomy-giving behavior in ‘freeing and forgetting’ (cluster 1-1), meaning that they leave the children on their own.

As stated above, consequent behaviors that are not included in the five most frequently observed consequent behaviors do not appear in the figure. However, note that table F1 in appendix F demonstrates that STR care workers significantly more often show interpersonal behaviors with focus on self as consequent behaviors to cluster 2-4 of the children, $\chi^2(8, n = 4184) = 17.71, p = .023, z = 3.40$. This means that in case children ask a question, care workers react by asking a question in which they depend on the children. Again the overall effect size ($w = 0.004$) is very small.

**Care workers’ reactions to children’s cluster 2-5**

![Consequent behaviors of care workers](image)

**FIGURE 9F:** The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-5 as antecedent behavior of the children.

In case children show neutral and very submitting behavior (cluster 2-5), they are giving in or are mindlessly obeying to the care workers.

STR care workers in the first place affirm this behavior (cluster 1-2). They show this significantly more often as a reaction than EAC care workers, $\chi^2(8, n = 953) = 34.50, p = .000, z = +4.83$. So in accordance with the principles of the specific treatment approach, STR children more often are being affirmed than EAC children are in case they accept influence...
and follow the rules. Note again that the overall effect size \( (w = 0.036) \) is small. Next, STR care workers react by controlling behavior; either neutral controlling behavior (cluster 1-5) or friendly controlling behavior (cluster 1-4). In case of cluster 1-5 ‘watching and controlling’, the care workers take charge of everything and make the children follow more rules. This transition concerns complementarity: the child is neutral and submitting whereas the care worker is neutral and controlling. In case of cluster 1-4 care workers show friendly guidance, teaching or explaining.

With EAC care workers it is the other way around. They react in the first place by friendly or neutral controlling behavior (cluster 1-4 and cluster 1-5) and in the second place they show ‘affirming and understanding’ (cluster 1-2).

Furthermore, both types of care workers show to a lesser extent antithetic behavior with cluster 1-1 ‘freeing and forgetting’. In case the obeying child behavior is noticed, the care worker tries next to incite the child to go his or her own separate way. Additionally, both types of care workers react by the opposite (cluster 2-1) behavior of ‘asserting and separating’. After the child obeyed, the care worker goes his or her own way to do his or her own thing.

**Care workers’ reactions to children’s cluster 2-6**

![Consequences of care workers](image)

**FIGURE 9G:** The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-6 as antecedent behavior of the children.
The next antecedent behavior of the children concerns hostile behavior. Cluster 2-6 'sulking and scurrying' means that the children are hostile and submitting; they whine or unhappily protest but do what the care worker wants. Both types of care workers largely respond with controlling behavior. Although minor differences are observed, these are not significant, $\chi^2(8, n = 516) = 13.64, p = .092$.

Both types of care workers react in the first place by controlling behavior. STR care workers firstly react by neutral control (cluster 1-5) and secondly by friendly control (cluster 1-4). With EAC care workers this is the other way around. They firstly show friendly control (cluster 1-4) and secondly neutral control (cluster 1-5). In case of 'watching and controlling' (cluster 1-5) they control in a matter-of-fact way and make children follow the rules and ideas of what is right and proper. In case of 'nurturing and protecting' (cluster 1-4) they warmly get the children interested or teach them.

In addition, both types of care workers show friendly autonomy-giving behavior in 'affirming and understanding' (cluster 1-2). They warmly try to understand the children even if they disagree or they invite the children to speak freely. Note that as a reaction to cluster 2-6 this is an antithetic reaction. It helps changing the hostile child behavior of cluster 2-6 into friendly child behavior, since cluster 1-2 behavior of care workers invokes friendly expressings (cluster 2-2) with children.

To a lesser extent both types of care workers react by 'freeing and forgetting' (cluster 1-1), in which they leave the children free to do their sulking, and by hostile control in 'belittling and blaming' (cluster 1-6). This latter reaction concerns complementary behavior to cluster 2-6 behavior of the children.

Care workers' reactions to children's cluster 2-8
Cluster 2-8 also concerns hostile antecedent behavior. In case of cluster 2-8 'wallowing off and distancing' children are hostile and autonomy-taking; they do not hear, they relate in an unconnected way or they angrily detach from the care worker. Both types of care workers show similar reactions to this hostile child behavior, $\chi^2(8, n = 286) = 5.42, p = .712$.

In the first place, the care workers react by controlling behavior. They show 'watching and controlling' (cluster 1-5), representing neutral and strong controlling behavior. By telling the children exactly what to do and what is right and proper, the care workers try to force the children to give up the hostile and separate behavior. In addition they show friendly 'nurturing and protecting' (cluster 1-4). In order to change the hostile child behavior of cluster 2-6, the care workers show this antithetic reaction. By means of this friendly influence through explaining or getting them interested they invoke the children to show the friendly submitting behavior of cluster 2-4 ('trusting and relying').

In the second place, the child care workers react by giving the children autonomy; either in a friendly way by 'affirming and understanding' (cluster 1-2), meaning that they warmly try to understand the children even if they disagree and that they invite the children to speak freely, or in a neutral way by 'freeing and forgetting' (cluster 1-1). In addition, the care workers react by 'asserting and separating' (cluster 2-1), meaning that they do their own things.
FIGURE 9H: The relative frequencies of the consequent SASB clusters of both STR (primarily structure) and EAC (primarily emotional and affective care) child care workers by which they follow SASB cluster 2-8 as antecedent behavior of the children.

Testing of transition matrices

In figure 9 per antecedent child behavior only the four or five most frequently observed consequent behaviors of the care workers are described. Consequently, the hostile behaviors of child care workers hardly are taken into consideration. This means that hostile consequents are not frequently observed with child care workers. Note that this does not mean that those hostile consequent behaviors of the child care workers are of little account clinically. For this reason the complete transition matrices of both types of care workers (presented in appendix E, table E1 and E2) are taken into consideration below.

There is an additional reason to consider the complete transitional frequency matrices. The presentation of the horizontal transitional percentages as above has descriptive value but also has its limitations. These transitional probabilities take the base rates of antecedent behaviors into account and therefore describe the most likely ways of moving from one behavior to another. Conversely, these transitional probabilities do not take the base rates of the consequent behaviors into account and therefore fail to explicate whether the frequency of a transition is significant. Whether the occurrence of a certain transition is significant or not depends on how probable the consequent behavior is (Bakeman & Gottman, 1986). To deal with this problem all transitions in each complete transition matrix are tested by means of the chi-square test and the standard z-scores with an alpha level of 0.01. Empty rows and columns are omitted from the transition matrix. The actual number of times each transition occurred is compared with the number of such transitions that would be expected if the behavioral events
were ordered randomly. The expected value of each transition is generated by taking the base rate of both the antecedent and the consequent behavior into account. For each cell in the matrix the total number in its row is multiplied by the total number in its column and divided by the total number of transitions. The formula for computing the z-scores is presented in paragraph 3.6. The z-scores of the complete matrices are presented in appendix E, table E1 and E2. These results are summarized in table 8. Table 8 presents only the significant transitions.

**Recognizable interaction patterns**

One of the most important things that the transition matrices in table 8 show is that care workers are not interacting arbitrarily. Interpersonal behaviors of STR care workers are associated with those of STR children, $\chi^2(144, n = 9890) = 2226.21, p = .000$, and also interpersonal behaviors of EAC care workers are associated with those of EAC children, $\chi^2(132, n = 7708) = 2436.84, p = .000$ (see appendix E). In both transition matrices a considerable number of transitions is significant. This means that these transitions are observed more frequently than expected by chance (indicated by a ‘+’), or that they are observed less frequently than expected by chance (indicated by a ‘-’).

What is more is that these significant transitions reveal recognizable patterns according to the SASB principles of *complementarity, similarity,* and *antithesis.* In table 8 all these principles are visualized diagonally, which is schematized in the following diagram:

![Diagram of SASB principles]

Reaction patterns according to these SASB principles of complementarity, similarity, and antithesis are discussed at length below.

In addition, table 8 also outlines *hostile* reactive behaviors of care workers. These are identified by means of boxing. Also these hostile consequent behaviors are discussed below.

Note that again the similarities between both types of care workers (table 8A versus table 8B) are more striking than the differences.
TABLE 8: Transition matrices with the antecedent SASB clusters of children in rows and the consequent SASB clusters of child care workers in columns, both in living units with primarily structure (STR) and in living units with primarily emotional and affective care (EAC). A '+' marks significant transitions with $z(0.01) > +2.58$. A '-' marks significant transitions with $z(0.01) < -2.58$.

### A: Antecedents of STR children with consequents of STR child care workers

<table>
<thead>
<tr>
<th>Antecedents of children</th>
<th>Consequent SASB clusters of STR child care workers</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>1-1 1-2 1-3 1-4 1-5 1-6 1-8 2-1 2-2 2-4 2-5 2-6 2-8</td>
</tr>
<tr>
<td>1-1</td>
<td>![Sequence concerning complementary behaviors]</td>
</tr>
<tr>
<td>1-2</td>
<td>![Sequence concerning similar behaviors]</td>
</tr>
<tr>
<td>1-4</td>
<td>![Sequence concerning antithetic behaviors]</td>
</tr>
<tr>
<td>1-5</td>
<td>![Sequence with hostile behaviors as consequents]</td>
</tr>
<tr>
<td>1-6</td>
<td>![Sequence concerning complementary behaviors]</td>
</tr>
<tr>
<td>1-8</td>
<td>![Sequence concerning similar behaviors]</td>
</tr>
<tr>
<td>2-1</td>
<td>![Sequence concerning complementary behaviors]</td>
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<td>2-2</td>
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<td>2-3</td>
<td>![Sequence concerning antithetic behaviors]</td>
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<tr>
<td>2-4</td>
<td>![Sequence with hostile behaviors as consequents]</td>
</tr>
<tr>
<td>2-5</td>
<td>![Sequence concerning complementary behaviors]</td>
</tr>
<tr>
<td>2-6</td>
<td>![Sequence concerning similar behaviors]</td>
</tr>
<tr>
<td>2-8</td>
<td>![Sequence concerning antithetic behaviors]</td>
</tr>
</tbody>
</table>

### B: Antecedents of EAC children with consequents of EAC child care workers

<table>
<thead>
<tr>
<th>Antecedents of children</th>
<th>Consequent SASB clusters of EAC child care workers</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1-1 1-2 1-3 1-4 1-5 1-6 1-8 2-1 2-2 2-4 2-5 2-6 2-8</td>
</tr>
<tr>
<td>1-2</td>
<td>![Sequence concerning complementary behaviors]</td>
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<tr>
<td>1-4</td>
<td>![Sequence concerning similar behaviors]</td>
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<tr>
<td>1-5</td>
<td>![Sequence concerning antithetic behaviors]</td>
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<tr>
<td>1-6</td>
<td>![Sequence with hostile behaviors as consequents]</td>
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<td>1-8</td>
<td>![Sequence concerning complementary behaviors]</td>
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<td>![Sequence with hostile behaviors as consequents]</td>
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<td>2-4</td>
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<td>2-5</td>
<td>![Sequence concerning similar behaviors]</td>
</tr>
<tr>
<td>2-6</td>
<td>![Sequence concerning antithetic behaviors]</td>
</tr>
<tr>
<td>2-8</td>
<td>![Sequence with hostile behaviors as consequents]</td>
</tr>
</tbody>
</table>
Table 8 is divided into four quadrants on the basis of the split in behaviors with focus on other (focus 1) and behaviors with focus on self (focus 2) of both antecedents and consequents. From these quadrants the lower left quadrant shows the most significant sequences. That is because children largely show behaviors with focus 2, whereas care workers largely show behaviors with focus 1. The upper right quadrant shows significant sequences in which the children focus on other and the care workers focus on self. In these sequences there is a role reversal between children and care workers. The upper left quadrant and the lower right quadrant show sequences in which both members of the interaction dyad have the same focus. Behavior of a particular focus is not easily followed by another person with behavior with the same focus. Therefore, the upper left quadrant and the lower right quadrant are relatively empty and significant transitions mainly are observed less frequently than expected by chance.

Complementarity

The SASB principle of complementarity states that if a child is focusing on self, there is a strong draw for the care worker to react by focus on other (that is focusing on the child) at the same point in interpersonal space. So there is correspondence on the affiliation dimension and reciprocity on the interdependence dimension (Benjamin, 1974, 1984).

Table 8 demonstrates that for both types of care workers nearly all complementary interchanges are significant in that they are observed more frequently than expected. In case care workers show behaviors with focus on other, these mostly are complementary reactions to the behaviors of the children. If care workers show cluster 1-1 it relatively often follows cluster 2-1 of the children; cluster 1-2 of the care workers relatively often follows clusters 2-2 of the children, and likewise, cluster 1-3 follows cluster 2-3, cluster 1-4 follows cluster 2-4, cluster 1-5 follows cluster 2-5, cluster 1-6 follows cluster 2-6.

It should be noted that a cloud of transitions less frequently observed than expected are surrounding the complementarity axis in the lower left quadrant, which makes the complementarity diagonal all the more striking.

In case care workers show behaviors with focus on self, these also significantly often constitute complementary reactions: cluster 2-4 of the care workers relatively often follows cluster 1-4 of the children, cluster 2-5 follows cluster 1-5, and cluster 2-6 follows cluster 1-6. In addition, for STR care workers cluster 2-2 relatively often follows cluster 1-2 of STR children. Since focus on other behaviors are defined as prototypical for adults and focus on self behaviors are defined as prototypically childlike, in these transitions there is a role reversal between the child care workers and the children. Note that these transitions are observed in low absolute frequencies (see appendix E, table E1 and E2).

A complementary relationship means a stable relationship (Benjamin, 1984). According to Henry et al. (1986) complementarity is separated in positive and negative complementarity. Positive complementarity concerns affiliative and autonomy-enhancing reciprocal interchanges, whereas negative complementarity concerns hostile and controlling reciprocal interchanges. Two kinds of sequences that concern negative complementarity are significantly often observed. ‘Belittling and blaming’ (1-6) relatively often follows ‘sulking and scurrying’ (2-6). Also, ‘sulking and scurrying’ (2-6) following ‘belittling and blaming’
(1-6), though with both types of care workers this occurred only once (see appendix E, table E1 and E2).

**Similarity**
The concept of similarity means that both participants to the interaction, so both care worker and child, assume the same position at the same time in the same interpersonal context (Benjamin, 1993).

Table 8 demonstrates one interpersonal interchange concerning similar behaviors that is significant for both types of care workers. Care workers relatively often show ‘asserting and separating’ (cluster 2-1) as a reaction to ‘asserting and separating’ (cluster 2-1) child behavior. This often is seen at the end of a series of interchanges when both persons split up.

As far as differences between table 8A and 8B are concerned, table 8A demonstrates that STR child care workers relatively often show neutral and strong controlling behavior in ‘watching and controlling’ (cluster 1-5) as a reaction to neutral and strong controlling (cluster 1-5) child behavior. When this happens there is a power struggle. This sounds as plausible interaction pattern to happen in living units in which structure is provided. Next, ‘disclosing and expressing’ (cluster 2-2) behavior of STR care workers relatively often is shown after expressings of children (cluster 2-2). This often happens when a care worker is playing a game with a child, for example a game of chess or table football, and both the care worker and the child are enthusiastic and try to win.

Furthermore, table 8B demonstrates that the hostile behavior of EAC child care workers in ‘ignoring and neglecting’ (cluster 1-8) relatively often constitutes a reaction to the same hostile behavior of the children (cluster 1-8). This occurs in busy situations in the residential living unit when children do not take into account that the care worker is busy and the care worker does not take time to pay attention to a particular child. However, this transition is observed with a very low absolute frequency (see appendix E, table E1).

Finally, table 8A shows that friendly control (cluster 1-4) of STR care workers follows the same friendly controlling behavior of STR children less frequently than expected. Also this transition is observed with a very low absolute frequency (see appendix E, table E1).

**Antithesis**
The SASB principle of antithesis describes the behavior of the care worker to be selected if the care worker desires a type of behavior from a child that is the opposite of what is being experienced. Antithesis is defined as the opposite to the complement of a specific behavior (Benjamin, 1974, 1984).

Table 8 shows two significant sequences regarding antithetic behaviors that are observed more frequently than expected for both types of care workers. Care workers relatively often show the antithetic behavior ‘watching and controlling’ (cluster 1-5) as a reaction to ‘asserting and separating’ (cluster 2-1) child behavior. In order to change cluster 2-1 child behavior into more adequate child behavior for a particular context, the care workers relatively often use neutral and strong controlling behavior. In addition, care workers relatively often show ‘asserting and separating’ (cluster 2-1) as an antithetic reaction to the children’s ‘watching and controlling’ (cluster 1-5). By keeping up their own autonomy and
Interpersonal behaviors of residential child care workers

continuing to do their own things the care workers try to reach that the children leave them alone.

Table 8 shows one significant sequence regarding antithetic behaviors that is observed less frequently than expected for both types of care workers. ‘Belittling and blaming’ (cluster 1-6) relatively rarely is shown as an antithetic reaction to friendly expressings of children (cluster 2-2). Fortunately, because ‘belittling and blaming’ would change this friendly child behavior into hostile child behavior, since it provokes ‘sulking and scurrying’ (cluster 2-6) from children.

Concerning the differences between table 8A and 8B, table 8A demonstrates for STR care workers that the antithetic reaction of the care workers’ (cluster 2-8) ‘walling off and distancing’ to the children’s ‘nurturing and protecting’ (cluster 1-4) relatively often is shown. This transition is observed only one time (see appendix E, table E1). However, this single occurrence was not expected by chance and although an event that occurs only one time still might have much impact, this transition is not further discussed.

The significant transition of ‘ignoring and neglecting’ (cluster 1-8) of STR care workers as an antithetic reaction to the friendly and submitting child behavior in ‘trusting and relying’ (cluster 2-4), also demonstrated in table 8A, is discussed below as a hostile sequence.

Finally, for EAC care workers table 8B demonstrates that they show ‘affirming and understanding’ (cluster 1-2) as a reaction to ‘sulking and scurrying’ (cluster 2-6) of the children less than expected. Unfortunately, because ‘affirming and understanding’ could change the hostile child behavior of cluster 2-6 into the more adequate friendly expressing child behavior of cluster 2-2.

Hostile sequences
In this last section of the paragraph about the one-step sequences of the care workers’ interpersonal behaviors, sequences with hostile consequent behaviors of child care workers are taken into consideration. Child care workers show hostile consequent behaviors not very often. The question is for what reason they sometimes do. Table 8 shows that these hostile consequents relatively often constitute a reaction to hostile, separate or controlling child behaviors.

Hostile controlling behavior of both types of care workers in ‘belittling and blaming’ (cluster 1-6) relatively often constitutes a reaction to neutral and hostile child behaviors as ‘deferring and submitting’ (cluster 2-5) and ‘sulking and scurrying’ (cluster 2-6). STR care workers also relatively often show this as a reaction to ‘walling off and distancing’ (cluster 2-8).

As seen above, both type of care workers show ‘belittling and blaming’ after friendly expressings of children (cluster 2-2) less than expected. EAC child care workers also show this after friendly and submitting child behavior (cluster 2-4) less than expected.

Hostile autonomy-giving behavior of care workers in ‘ignoring and neglecting’ (cluster 1-8) mostly is seen in very busy situations in the residential living unit. For both types of care workers it relatively often constitutes a reaction to neutral controlling child behavior (cluster 1-5 ‘watching and controlling’).
For STR care workers ‘ignoring and neglecting’ also relatively often constitutes an antithetic reaction to friendly submitting behavior (cluster 2-4, ‘trusting and relying’). STR care workers rarely ignore or neglect, but if they do they are not able to take time to answer questions or they ignore very demanding child behavior. This observation appears to be contrary to the concept of the treatment approach of providing structure.

As described above, for EAC care workers the hostile ‘ignoring and neglecting’ behaviors relatively often constitute a reaction to the same hostile behavior of the children (cluster 1-8).

Note that neutral and very controlling behavior in ‘watching and controlling’ (cluster 1-5) might hold some hostility. Cluster 1-5 behavior of the care workers relatively often constitutes a reaction to the hostile child behaviors ‘sulking and scurrying’ (cluster 2-6) and ‘walling off and distancing’ (cluster 2-8).

Also consequent behaviors with focus on self concern hostile behaviors, namely ‘sulking and scurrying’ (cluster 2-6) and ‘walling off and distancing’ (cluster 2-8). These already are discussed above.

### 4.4 SASB complex messages

Once there is more than one SASB cluster needed to accurately represent the process in an interpersonal utterance and these different aspects can not be extracted as clearly discernible messages, this is a matter of complex communication. The present paragraph describes what kinds of complex messages child care workers show in relation to children. Therefore interpersonal behaviors that capture two inextricable messages are reviewed. This refers to subquestion 5 stated in paragraph 3.5. In addition, it is explored whether there are differences between the complex messages of both types of care workers. This refers to subquestion 6 stated in paragraph 3.5.

**Totals**

In total 1052 elements from child care workers in relation to children are indicated as complex messages. From STR child care workers to STR children 579 elements, which is 7.1% of all interpersonal behaviors of STR child care workers are coded as complex messages. From EAC child care workers in relation to EAC children 473 elements (7.3%) are coded as complex messages.

The absolute and relative frequency of the observed complex messages of both types of child care workers is shown in table 9.

**Testing of differences in complex codes between both types of care workers**

By means of the chi-square test and standard z-scores (computed according to the formula presented in paragraph 3.6) it is tested whether there are significant differences in complex codes between both types of care workers. Only complex codes that have been shown with an
Interpersonal behaviors of residential child care workers

absolute frequency of at least 10 by one (or both) type(s) of care workers are involved in the test. The remaining complex codes are pooled together in the category ‘other’.

The result of the chi-square test shows a significant difference in complex codes between both types of care workers, $\chi^2(14, n = 1052) = 89.57, p = .000$. Comparable to the testing of differences in frequencies and sequences between the two groups of care workers, a small effect size is found, $w = 0.085$. Therefore, significant $z$-scores have to be interpreted with caution.

<table>
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<tr>
<th>Complex code</th>
<th>STR care workers</th>
<th>EAC care workers</th>
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</thead>
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<td>$%$</td>
<td>$z$</td>
</tr>
<tr>
<td>1-2 + 1-5</td>
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<td>1-4 + 2-1</td>
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</tr>
<tr>
<td>1-2 + 1-6</td>
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<td>2.4</td>
</tr>
<tr>
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</tr>
<tr>
<td>1-1 + 2-1</td>
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<td>1.4</td>
</tr>
<tr>
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</tr>
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</tr>
<tr>
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<td>100</td>
</tr>
</tbody>
</table>

$\chi^2 = 89.57$  \hspace{1cm}  $df = 14$  \hspace{1cm}  $p = .000$  \hspace{1cm}  $n = 1052$

Note. STR = provide primarily structure; EAC = provided primarily emotional and affective care.

*Most frequently observed complex messages*

As a complex message both types of residential child care workers most frequently show SASB cluster 1-2 + 1-5 'affirming and understanding yet watching and controlling'. STR show it more frequently than EAC care workers, $z = +5.32$. This message implies that the care worker combines friendly autonomy-giving behavior with neutral influence. It indicates that the child care worker shows understanding for the child's ideas, thoughts, or feelings, but at the same time the care worker refers to the rules which the child should not ignore. Since STR
care workers seem to use this complex message to influence the children in a subtle way, this corresponds to the specific treatment approach of providing structure.

An illustration is in a conversation of a STR care worker and a STR child in which the care worker reminds the boy of the fact that the child still has to pay for a book he willfully has ripped up. The boy keeps on expressing that he already paid back a part of the total amount of money, to which the care worker replies:

STR care worker: (a strict tone in his voice) Yes, you already paid back a part of the total amount of money.... (the care worker affirms, but tells at the same time it is not yet enough).

Another example is the following influencing question with the pseudo-autonomy suggested by the questioning format:

EAC care worker: Hey you guys, you intend to stay inside now?

The complex code of cluster 1-2 + 1-5 also can be the result of a combination of a verbal and a non verbal message:

STR care worker: (as a reaction to a child who is expressing in a friendly way but very loudly) The child care worker puts her fingers in her ears while she asks: what did you say?

Another illustration: while sitting round the table an EAC boy enthusiastically is telling the EAC care worker about his exciting gym class and meanwhile making a lot of noise by rattling the cookie-tin, and the EAC care worker reacts by affirming this story and meanwhile taking away the cookie-bin.

Furthermore, both types of child care workers frequently show complex messages that regard neutral but separate behavior with focus on self (cluster 2-1) in combination with one of the interpersonal behaviors with focus on other (cluster 1-1, 1-2, 1-3, 1-4, 1-5, 1-8). In total these complex codes constitute almost 30% of all complex messages of STR care workers and 40% of all complex messages of EAC child care workers. These complex interpersonal behaviors are the result of the fact that human beings are able to do two separate things simultaneously. The child care worker is busy doing his or her own things and simultaneously is showing active interpersonal behavior towards a particular child. Often this means that a child care worker is interacting with two children at the same time about different subjects.

First, the child care workers can combine controlling behavior and asserting behavior. In case of the complex message ‘nurturing and protecting yet asserting and separating’ (cluster 1-4 + 2-1) the child care worker is guiding or explaining things to a child while doing his or her own separate things. As an example:

STR care worker: (who is playing soccer with five boys) If you had used your left foot, you would have been able to score a goal. Meanwhile the care workers turns his back to this child and kicks the ball to another child.

EAC care worker: The care worker is helping a girl into her coat while talking to another child.

In case of 'watching and controlling yet asserting and separating' (cluster 1-5 + 2-1) the care workers use neutral control and keep up their own autonomy at the same time. The care worker tells a child exactly what to do while at the same time the care worker is going his or her own separate way, often implying that the care worker is focusing at another child.

Next, the care workers can combine autonomy-giving behavior and asserting behavior. This autonomy-giving behavior is either friendly (cluster 1-2), or neutral (cluster 1-1), or hostile (cluster 1-8). The complex message of 'affirming and understanding yet asserting and separating' (cluster 1-2 + 2-1) is more frequently shown by EAC care workers, $z = +3.66$. So while care workers are busy doing their own things, EAC care workers more often than STR
care workers make the effort to affirm one of the children at the same time. This seems to correspond to the principles of the specific treatment philosophy of providing emotional and affective care. Examples of this complex message are:

- **STR care worker**: (as a reaction to a child who puts his leg up to show the care worker his new shoes) The care workers shortly grasps the child's leg while she continues her way to the kitchen.

- **EAC care worker**: (as a reaction to a friendly expressing of a child) The care worker is nodding and meanwhile he turns his head in the direction of another speaking child.

The complex message (cluster 1-8 + 2-1) 'ignoring and neglecting yet asserting and separating' mostly happens in the context of a busy situation in the residential living unit. A child who is asking for attention is left alone by the care worker because it is so busy that the care worker should be able to do three or four things at the same time to handle it all. This might be too hard. An illustration is a situation in which seven children are around and the care worker is busy arranging with each child what the child is going to do that afternoon, and while talking to one child another child is asking where he can find his gloves. By not answering this child the care worker is ignoring as well as busy doing his own things. In order to prevent these complex messages to occur the care workers probably try to teach the children not to jump out of turn.

In addition, a complex message that is more frequently shown by STR care workers than by EAC care workers \((z = +4.51)\) concerns 'nurturing and protecting yet trusting and relying' (cluster 1-4 + 2-4). This means that the care worker tries to take care of the child but needs information from the child to be able to take care and for this purpose the care worker asks the child a question. For example:

- **STR care worker**: The child care worker is helping the child to find a pair of trousers and asks this child: is your identification number sewed into these trousers?

One more remarkable complex message that STR child care workers show more frequently than EAC care workers concerns 'loving and approaching yet watching and controlling' (cluster 1-3 + 1-5), \(z = +2.91\). This means that the care worker warmly invites the child to be in touch and to be playful, yet the care worker uses strong influence to control the child. The care worker and the child are having a playful romp but at the same time the care worker tries to keep the child under control. This seems to match with the concept of providing structure.

Finally, complex messages on SASB surface 1 with focus on other, in which autonomy-giving and controlling behavior is combined, are shown by both types of care workers.

In case child care workers show 'freeing and forgetting yet nurturing and protecting' (cluster 1-1 + 1-4) they on one hand leave the children free to do things in their own way, while at the other hand the care workers try to control the children in a friendly way. An example of behavior with cluster 1-1 + 1-4 of a STR care worker is:

- **STR care worker**: (at the end of dinner as a reaction to a child who is talking to another child) Let us observe a moment's silence. Meanwhile his glance passes the child.

In case of 'freeing and forgetting yet watching and controlling' (cluster 1-1 + 1-5) the care worker on one hand leaves the children free to do things in their own way, while at the other hand the care worker tries to control the children in a neutral way. An example of behavior
with cluster 1-1 + 1-5 is a reaction to a girl who says that she does not know how she wants to spend her afternoon:

**EAC care worker:** Come up with something.....

This latter complex message regards opposite behaviors on SASB surface 1. According to the SASB model opposite communications on surface 1 are defined as *double-bind communications* (Benjamin, 1984). Since double-bind communications represent a paradoxical interpersonal situation to which there is no appropriate response and from which there is no escape, care workers should try to be careful in showing these double-bind communications.

Two more kinds of double-bind communications are observed. These regard the following. In 'affirming and understanding yet belittling and blaming' (cluster 1-2 + 1-6) friendly autonomy-giving behavior is tied to hostile controlling behavior. It means that the child care worker invites the child to speak or act freely or tries to understand the child while the care worker is punishing the child or is putting the child down. Examples in which the child care worker is teasing the child but at the same time is putting the child down are:

**STR care worker:** (in passing the child who is busy tinkering with wood and is not asking for any attention) Will you manage with your fat fingers?

**EAC care worker:** I think you are going to bed early tonight, don't you think...you are doing fine, aren't you?

In case of 'nurturing and protecting yet ignoring and neglecting' (cluster 1-4 + 1-8) friendly control is bound to hostile autonomy-giving behavior. An example is when a boy enters the room with a pen in his hand and asks if he is allowed to eat an apple and the care worker does not respond to the question but reacts by:

**EAC care worker:** (with a warm voice) You better should be careful with that pen because it spots.

### Sequences of complex messages

An interesting question is whether complex messages of child care workers compel children to behave with complex messages or not, and what kinds of single and complex interpersonal behaviors these consequent behaviors concern. Due to the fact that the SASB computer program FOLLOW, which traces one-step sequences, ignores whether the reported clusters are part of complex communication (see paragraph 3.6), the answer to this question can only briefly be explored.

The complex messages of STR child care workers provoke complex child behaviors in 29.7%, whereas in 68.4% these complex messages provoke single interpersonal child behaviors. In 1.9% complex messages show up at the end of a series of interchanges.

The complex messages of EAC child care workers provoke complex child behaviors in 20.9%, whereas in 76.4% these complex messages provoke single interpersonal child behaviors. In 2.7% complex messages show up at the end of a series of interchanges.
4.5 Differences between individual child care workers

Although differences between both types of care workers are significant, these differences are rather small and therefore have to be interpreted with caution. Similarities between both types of care workers are more prominent than differences. This conclusion raises the question whether differences exist between individual child care workers, without regard to the type of care they provide.

Table 10 presents the differences between individual child care workers. Firstly, these differences are tested for significance by means of the chi-square test and standard z-scores (computed according to the formula presented in paragraph 3.6). The results are shown in table 10A. Secondly, the behavioral repertoire of each single care worker, that is the relative frequencies of his or her observed interpersonal behaviors, are presented. Table 10B shows these relative frequencies. For reasons of readability a summary of these results are presented in table 10C.

Individual care workers compared with one another

It is tested whether significant differences between individual care workers exist or not. Results are demonstrated in table 10A.

Table 10A shows a statistical significant difference between interpersonal behaviors of individual child care workers, $\chi^2(120, n = 14584) = 1225.74$, $p = .000$. By interpreting the standard z-scores with an alpha level of 0.01, it is possible to draw conclusions about interpersonal behaviors that characterize individual care workers compared to their colleagues. These briefly are described in terms of the SASB dimensions:

- Care workers 1 and 6 relatively often show neutral autonomy-giving and relatively rarely friendly autonomy-giving behavior.
- Care worker 2 is characterized by friendly control and more loving and approaching behavior.
- Care workers 3 and 16 relatively often show behavior with focus on self.
- Care worker 4 and 10 are distinguished by less controlling behavior.
- Care workers 5, 8, and 11 relatively often show friendly autonomy-giving behavior and relatively rarely neutral autonomy-giving behavior and neutral control.
- Care worker 7 is characterized by both very friendly autonomy-giving and hostile controlling behavior.
- Care workers 9 and 14 show relatively often neutral control.
- Care worker 13 relatively often shows hostile control.
A table showing z-scores for each individual child care worker (n = 16) and SASB clusters. Significant z-scores are bold.

**Magnitude of the differences**

It was expected that the two different residential treatment approaches could be distinguished by characteristics of social interaction between care workers and children in daily life situations in the living units. So far it was concluded that differences between the two types of care are rather small. On top of that, significant differences are found between individual care workers, without regard to the type of care they provide. The next issue is whether or not differences between individual care workers are as strong as differences between the two types of care workers. The solution to this issue is found by means of calculating the values of Cramer’s phi. Cramer’s phi measures the degree of association between two sets of observations (Siegel and Castellan, 1988).

To estimate the magnitude of the differences between individual care workers, Cramer’s phi was calculated for all (16^2) = 120 pairs of child care workers. The mean phi is 0.20, which represents a weak association. This indicates that in daily life situations the interpersonal behaviors of all individual care workers are quite similar, regardless of the type of care they provide.

Next, the mean phi of the homogeneous pairs (i.e., pairs of STR care workers and pairs of EAC care workers) was compared with the mean phi of heterogeneous pairs (i.e., pairs of one STR and one EAC care worker). The mean values are as follows:
• mean phi of homogeneous pairs (STR) = 0.22;
• mean phi of homogeneous pairs (EAC) = 0.17;
• mean phi of heterogeneous pairs (STR and EAC) = 0.20.

These results indicate that according to SASK measurement the average similarity in observed interpersonal behavior between two care workers that both are from the STR group or both from the EAC group is almost the same as the average similarity between a member of the STR group and a member of the EAC group. In other words, care workers within the same type of care, either STR or EAC, are as different as care workers between the two the types of care.

To make sure one more technical approach was applied to evaluate whether or not the found small differences between STR and EAC care workers have some meaning, other than ‘being significant’. Therefore, all 16 care workers randomly were divided into two groups, and phi was calculated under these random conditions. This process of random allocation to two groups respecting the same data was repeated 20 times. The mean phi is 0.07; the range being 0.04 to 0.14. In table 7 in paragraph 4.2 the differences between the original groups, a group of STR workers and a group of EAC workers, were presented. The accompanying value of phi is 0.08. This value of the original phi (0.08) falls well within the range of 0.04 to 0.14, which is the result of random allocation. This indicates that interpersonal behaviors of care workers do not show greater resemblance once they are grouped according to the type of care they provide.

Apparently and contrary to what was expected, the two specific residential treatment approaches can not be distinguished by characteristics of interpersonal behaviors of care workers in everyday situations in the living units.

**Behavioral repertoire of each individual care worker**

In order to provide some more insight into interpersonal behaviors of individual care workers, the main characteristics of the behavioral repertoire of each individual care worker are described. For each single care worker the relative frequencies of the observed interpersonal behaviors are presented. Table 10B shows per care worker per SASK cluster the relative frequencies, which are horizontal percentages. In the table it is highlighted which four SASK clusters each care worker most frequently shows. Together these four SASK clusters cover per care worker at least 80% of all their interpersonal behaviors.

Table 10B demonstrates that from all STR care workers (care workers 1 to 8) the majority (workers 1 to 6) show in the first place friendly controlling behavior (cluster 1-4) and in the second place friendly autonomy-giving behavior (cluster 1-2), covering about 50% of their behaviors. In the other 50% they differ from each other; especially in the amount of strong controlling behavior (1-5), loving and approaching (1-3), and neutral autonomy-giving behavior (1-1).

The tendency that most STR care workers put friendly control in front and show the constructive stimulating, guiding, and teaching behaviors of cluster 1-4, would correspond to the concept of the specific treatment approach of providing structure. However, this tendency has not been confirmed by statistical analysis and it has not systematically emerged from the exploration of the sequences. Only after one kind of interpersonal child behavior, that is after
children's asserting or separating behavior (2-1), STR care workers show more teaching or guidance (1-4).

Table 10B demonstrates that also four out of eight EAC care workers (worker 10, 12, 14, and 16) show in the first place friendly controlling behavior (cluster 1-4) and in the second place friendly autonomy-giving behavior (cluster 1-2). With the other four EAC care workers this is the other way around. They first show affirming and understanding (1-2) and next nurturing and teaching (1-4). Also the EAC care workers differ in their amount of strong controlling behavior (1-5), loving and approaching (1-3), and neutral autonomy-giving behavior (1-1).

**TABLE 10B:**
The relative frequencies of the SASB clusters of each single child care worker. In each row the most frequently observed SASB cluster is boxed, the second one is printed in bold, the third one is underlined, and the fourth one is printed in italics.

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</table>

*Note.* STR = primarily structure is provided; EAC = primarily emotional and affective care is provided.

In order to clarify the picture that is presented in table 10B, table 10C is prepared. Concerning all 16 care workers, in table 10C care workers that demonstrate comparable behavioral styles are grouped together, thus without regard to the type of care they provide. Per care worker only the four most frequently observed interpersonal behaviors are included in the table.
TABLE 10C:
Per child care worker the four most frequently observed SASB clusters. In each row the most frequently observed SASB cluster is marked with ****, and the second, third, and fourth one are marked with respectively ***, **, and *.

<table>
<thead>
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<td>STR 1</td>
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<td>STR 2</td>
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<td>EAC 10</td>
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<td>STR 7</td>
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<td>EAC 11</td>
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</tbody>
</table>

Note. STR = primarily structure is provided; EAC = primarily emotional and affective care is provided.

Table 10C demonstrates a large group of both STR and EAC care workers (the upper ten care workers) who first show friendly control in nurturing and teaching (cluster 1-4) and in the second place show friendly autonomy-giving in affirming and understanding (cluster 1-2). In addition to that:

- care workers 1, 2, and 10 are in the third place are characterized by doing their own things (cluster 2-1) and furthermore peacefully leaving the children free to do whatever they want (cluster 1-1);
- care workers 3, 5, 12, and 16 also are characterized by thirdly doing their own things (cluster 2-1), but furthermore by strongly controlling the children in order to make them follow the rules (cluster 1-5);
- care worker 14 shows in the third place strong controlling behavior (1-5) and in the fourth place is doing his or her own things (cluster 2-1);
- care workers 4 and 6 in the third place leave children free to do what they want to do (cluster 1-1) and next they do their own things (cluster 2-1).

Care worker 7 is most different from all the others. This care worker shows first affirming and understanding behavior (cluster 1-2), next strong neutral controlling (cluster 1-5) behavior, and furthermore friendly nurturing or teaching (cluster 1-4) as well as separate behavior (cluster 2-1).
The lower five care workers first show friendly affirming and understanding (cluster 1-2) and in the second place they show friendly control in nurturing and teaching (cluster 1-4). In addition to that:

- care workers 8 and 15 are characterized by thirdly doing their own things (cluster 2-1) and furthermore peacefully leaving the children free to do whatever they want (cluster 1-1);
- care workers 9 and 13 show in the third place strong controlling behavior in order to make the children follow the rules (cluster 1-5) and next do their own things (cluster 2-1);
- care worker 11 in the third place does his or her own things (cluster 2-1) and next shows strong controlling behavior (cluster 1-5).

### 4.6 Summary

In the current chapter interpersonal behaviors of child care workers were characterized. Two different treatment approaches were therewith compared: residential living units with the emphasis on providing structure (STR) and living units with the emphasis on providing emotional and affective care (EAC). The similarities between interpersonal behaviors of both types of care workers turned out to be far more prominent than the differences.

In this paragraph the observed interpersonal behaviors of child care workers respecting their frequencies, sequences and complex messages are summarized. This summary, together with the summary of the next chapter, is presented as an answer to the central research question. Firstly, patterns of interpersonal behaviors that appeared to be similar to both STR and EAC care workers are systematically put together. Secondly, patterns of interpersonal behaviors that represent tiny differences are systematically put together once.

### Characteristics of care workers' interpersonal behaviors

**SASB dimensions**

Interpersonal behaviors of child care workers, characterized in terms of the three SASB dimensions (focus, affiliation, and interdependence):

- Care workers mainly show interpersonal behaviors with *focus on other*, meaning that they mostly are concerned with what is going to be done to or for the children.
- In almost two thirds of all their interpersonal behaviors they show *truly friendly* behaviors.
- In one third of all their interpersonal behaviors they show neutral (not friendly, not hostile) behaviors.
- In very low frequencies they show *truly hostile* behaviors (less than 2%).
- There is little emphasis on *controlling* behaviors (a little more than 40%) in comparison with *autonomy-giving* behaviors (a little less than 40%).

**SASB clusters**

Interpersonal behaviors of child care workers, characterized in terms of SASB clusters:

- By far the most frequent they show cluster 1-4 *nurturing and protecting* and cluster 1-2 *affirming and understanding* (each ± 30%).
- Next they show cluster 2-1 *asserting and separating* (± 15%).
• Also to a substantial degree they show cluster 1-1 freeing and forgetting and cluster 1-5 watching and controlling (each ± 10%).
• To a very small extent they show cluster 1-3 loving and approaching, cluster 1-6 belittling and blaming, cluster 1-8 ignoring and neglecting, and cluster 2-2 disclosing and expressing (each ± 1%).
• They show hardly any cluster 2-4 trusting and relying, cluster 2-5 deferring and submitting, and cluster 2-8 walling off and distancing (each < 0.5%).
• And they never show cluster 1-7 attacking and rejecting, cluster 2-3 joyfully connecting, cluster 2-6 sulking and scurrying, and cluster 2-7 protesting and recoiling.

Sequences
Especially from the sequences it becomes clear that care workers are certainly not interacting arbitrarily. The interpersonal behaviors of care workers are linked with those of children into recognizable patterns.

On one hand, by describing patterns of antecedent behaviors of children and consequent behaviors of care workers, it is explicated what the most likely ways are of moving from one behavior to another. It describes what interaction patterns commonly can be seen in the residential living units.

On the other hand, by testing which patterns of antecedent behaviors of children and consequent behaviors of care workers occur more often than expected by chance, it is explicated which behaviors of care workers are truly associated with those of children.

Interaction patterns, characterized in terms of commonly observed sequences are the following:
• To demanding and controlling child behavior (1-5), the care workers mainly react by continuing doing their own things (2-1), and furthermore by inviting the children to speak freely (1-2), or by controlling the children (1-4 and 1-5).
• To asserting child behavior (2-1), they mainly react by friendly control such as teaching and guidance (1-4), and furthermore by also asserting and separating themselves (2-1), or by strong controlling behavior (1-5), by affirming (1-2), or by letting the children free (1-1).
• To friendly expressings (2-2)* of the children, they by far the most frequent react by friendly affirming (1-2), and additionally they often react by friendly teaching and explaining (1-4).
• To joyfully connecting child behavior (2-3), they mainly react by affirming (1-2), by loving (1-3), or by nurturing (1-4).
• To friendly trusting and relying behavior (2-4), they by far the most frequent react by nurturing and teaching (1-4), and next by affirming (1-2).
• To deferring and submitting child behavior (2-5), they mainly react by controlling behavior (1-4 and 1-5), or by inviting the children to speak freely (1-2).
• Also to hostile sulking of the children (2-6) they mainly react by controlling behavior (1-4 and 1-5), and furthermore by inviting the children to speak freely (1-2).
• And also to hostile walling off and distancing child behavior (2-8) they mainly react by controlling behavior (1-4 and 1-5), and furthermore by inviting the children to speak freely (1-2).
SASB structural principles
Patterns of antecedent behaviors of children and consequent behaviors of care workers that occur more often than expected by chance explicate which behaviors of care workers are truly associated with those of children. These patterns are described according to the SASB principles of complementarity, similarity, antithesis, and hostility.

- **Complementary** interaction patterns structure a great deal of the interpersonal behaviors of care workers and children. This counts for both positive and negative complementarity, but positive complementarity is far more prominent. Often occurring positive complementary interchanges are 2-1/1-1, 2-2/1-2, 2-3/1-3, 2-4/1-4, and 2-5/1-5. Less occurring negative complementary interchanges are 2-6/1-6, and 2-8/1-8.

- The principle of **similarity** is mostly demonstrated as both care workers and children reacting by asserting and separating and both doing their own things (2-1), which often is seen at the end of a series of interchanges between a care worker and a child, when they both split up.

- According to the principle of **antithesis** care workers show neutral but very controlling behavior (1-5) as a reaction to neutral but very asserting child behavior (2-1). By showing cluster 1-5 as an antithetic reaction to cluster 2-1 behavior, the care worker tries to provoke new child behavior (cluster 2-5), which the care workers sees as more adequate child behavior for a particular context.

- Also according to the principle of **antithesis** care workers react by neutral separate behavior (2-1) to neutral controlling behavior of the children (1-5). By showing that they do not have time for the demanding child, the care workers try to reach that the children will leave them alone.

- Care workers not very often show **hostile** belittling and blaming (1-6), but if they do it mostly constitutes as reaction to very submitting child behavior (2-5), or to hostile sulking of the children (2-6).

- Care workers not very often show hostile ignoring and neglecting (1-8), but if they do it mostly constitutes as reaction to very demanding and controlling child behavior (1-5).

SASB complex messages
About seven percent of all the interpersonal behaviors of child care workers are characterized as SASB complex messages. These consist:

- mostly of **affirming and understanding yet watching and controlling** (± 40%), in which they show understanding for the children’s thoughts or feelings but at the same time refer to the rules which the child should not ignore;

- and also to a substantial degree of a combination of **asserting and separating** with some interpersonal behavior with **focus on other** (together ± 30%), which mostly indicates that the care worker is interacting with two children at the same time about different subjects.

**Tiny differences between two types of care workers**
The interpersonal behaviors of care workers who are providing structure (STR) and care workers who primarily are providing emotional and affective care (EAC) appeared to be largely comparable. The effect sizes of all statistically significant differences between the two treatment approaches appeared to be very small (ν always smaller than 0.1). Therefore, these
Interpersonal behaviors of residential child care workers

Differences between the two types of care workers are of marginal importance and are subordinate to the similarities.

Below the differences systematically are put together, in order to provide an overview of the tiny differences.

**SASB clusters**

In terms of SASB clusters the following differences are observed:

- STR care workers use more cluster 1-3 *loving and approaching*, cluster 2-2 *disclosing and expressing* and cluster 2-4 *trusting and relying*.
- EAC care workers use more cluster 1-5 *watching and controlling* and cluster 1-6 *belittling and blaming*.

**Sequences**

Concerning the observed child / care worker interaction patterns, the following differences are shown:

**STR care workers:**

- more often leave the children on their own (1-1) after their expressing behavior (2-2);
- more often affirm the children (1-2) after they have followed the rules (2-5);
- show more approaching behavior (1-3) after children’s playful connecting behavior (2-3);
- show more teaching and guidance (1-4) after children’s asserting and separating behavior (2-1);
- more often express themselves (2-2) after expressing behavior of the children (2-2);
- more often ask questions in which they depend on the children (2-4) after children have asked them a question (2-4).

**EAC care workers:**

- show more freeing and forgetting (1-1) after children’s joyfully connecting behavior (2-3);
- more often affirm (1-2) expressings of the children (2-2).

**SASB structural principles**

A few differences in terms the SASB principles of complementarity, similarity, antithesis, and hostility are observed. The following patterns, which are observed with an absolute frequency of ten or more, are shown more frequently than expected by chance by STR care workers, whereas EAC care workers do not show these more often than expected by chance.

- According to the principle of *complementarity* STR care workers show disclosing and expressing (2-2) more often than expected by chance as a reaction to affirming behavior of the children (1-2).
- According to the principle of *similarity* STR care workers more often than expected by chance show controlling behavior (1-5) as a reaction to controlling child behavior (1-5), which concerns a power struggle.
- Also according to the principle of *similarity* STR care workers more often than expected by chance show expressing behavior (2-2) as a reaction to expressing child behavior (2-2), which mostly happens when they are playing some game together.
- According to the principles of *antithesis* and *hostility* STR care workers more often than expected by chance ignore (1-8) a question or dependent behavior (2-4) of the children.
SASB complex messages
Concerning differences in SASB complex messages, it is demonstrated that STR care workers more frequently show the complex messages of:

- SASB clusters 1-2 + 1-5, in which they show understanding for the children’s thoughts or feelings but at the same time refer to the rules which the child should not ignore;
- SASB clusters 1-3 + 1-5, in which they are approaching and playful towards the child but at the same time use strong influence to control the child;
- SASB clusters 1-4 + 2-4, in which they take care for a child but in order to be able to ask the child for particular information.

EAC care workers more frequently show the complex message of:

- SASB clusters 1-2 + 2-1, in which they affirm a child while they at the same time are interacting with another child.

Differences between individual child care workers
Differences between individual care workers are not larger in case they represent a different type of care. The two specific residential treatment approaches can not be distinguished by characteristics of interpersonal behaviors of care workers in everyday situations in the living units.

Respecting interpersonal behaviors of individual care workers, a large group of both STR and EAC care workers in the first place show friendly controlling behavior (cluster 1-4) and in the second place they show friendly autonomy-giving behavior (cluster 1-2). With the other care workers this is the other way around. In their remaining behavior the care workers differ from each other in the amount of strong controlling behavior (1-5), loving and approaching (1-3), and neutral autonomy-giving behavior (1-1).